UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte RALF BERSCHEID, HEINZ EGGENSPERGER, WOLFGANG BEILFUSS, SABINE BEHRENDS, and BURGHARD PUCHSTEIN

Appeal No. 2005-2059
Application No. 08/860,007

ON BRIEF

Before SCHEINER, ADAMS, and MILLS, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

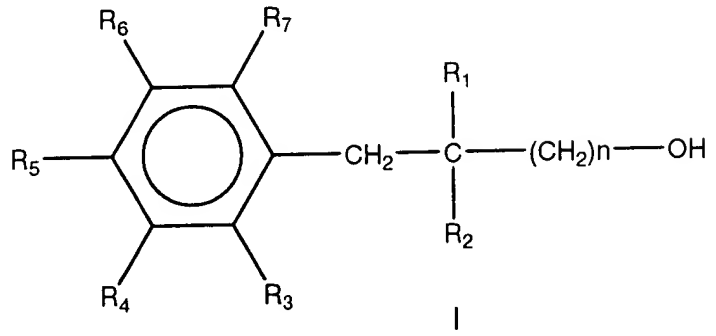
DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 8, 13, 14, 16-18, 21-26[1] and 33-35. According to appellants (Brief, page 2), the only remaining claims, "[c]laims 19, 20, 28-32 and 36-47 stand withdrawn from consideration pursuant to a Restriction Requirement."

[1] Appellants assert (Brief, page 12), "[a]ppellants have deleted claim 26 in response to the questions raised by the Board of Appeals in its January 29, 2003 decision...." We note, however, appellants statement of the status of the claims (Brief, page 2), wherein appellants identify claim 26 as pending. Further, appellants provide arguments on this record against the examiner's prior art rejection of claim 26. Accordingly, contrary to appellants' assertion (Brief, page 12), claim 26 is pending on this record.

Claims 13, and 14 are illustrative of the subject matter on appeal and are reproduced below:

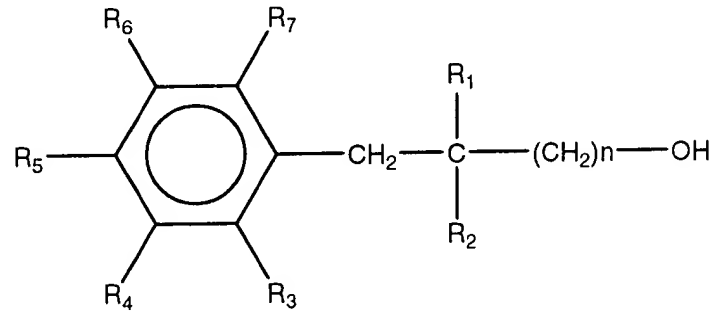
13. A compound according to formula I,



I

wherein R_1, R_3, R_5, R_6 and R_7 are hydrogen; R_2 is an ethyl group; R_4 is chlorine; and n is 1 or 2.

14. A disinfectant, antiseptic, antimycotic, deodorant or preservative comprising:
a compound selected from alcohols, surfactants and solvents; and at least one compound according to formula I:



I

wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sufphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyantate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or suphur atoms, C_2-C_8 alkenyl and C_3-

C_8 alkynyl, optionally attached to the aromatic ring by –S- or –O-, and n is 1 or 2,

with the proviso, that

i) when R_1 and all groups R_3 through R_7 are hydrogen, then n = 2;
ii) when R_1 and R_2 are C_1-C_6 alkyl and
  a) all groups R_3 to R_7 are hydrogen, or
  b) R_5 is methyl, methoxy or chloride, and all other groups R_3, R_4, R_6 and R_7 are hydrogen, then n=2;
iii) when R_1, R_2 and R_4 are methyl and all groups R_3 and R_5 through R_7 are hydrogen, then n=2;
iv) when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n=2;
v) when R_1, R_3, R_6 and R_7 are hydrogen, R_2 is methyl, and R_4 and/or R_5 are hydrogen or C_1-C_6 alkyl, then n= 2;
vi) when R_1 and R_4 through R_7 are hydrogen, R_2 is methyl or ethyl, and R_3 is methyl or methoxy, then n=2;
vii) when R_1, R_2, R_5 and R_7 are hydrogen, R_2 is methyl, R_4 and R_6 are methyl or R_4 is hydrogen and R_6 is methyl, then n=2; and
viii) when R_1 is hydrogen, R_2 is butyl, R_3 and R_5 are chloride, and all other groups R_4, R_6 and R_7 are hydrogen, then n=2.

The references relied upon by the examiner are:

Hopp et al. (Hopp)	4,110,430	Aug. 29, 1978
Sipos	4,321,257	Mar. 23, 1982
Hafner et al. (Hafner)	4,968,668	Nov. 6, 1990

(Vogel), A TEXT-BOOK OF PRACTICAL ORGANIC CHEMISTRY INCLUDING QUALITATIVE ORGANIC ANALYSIS (Arthur I. Vogel, ed., 3d ed., John Wiley & Sons Inc.) (1965[2])

[2] We note that the examiner did not identify the publication date of this reference, accordingly we refer to the December 7, 1965 U.S. Patent Office date stamp appearing on the title page of this reference.

GROUNDS OF REJECTION

Claims 8, 14, 16-18, and 21-25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hopp.

Claims 8, 13, 14, 16-18, 21-25 and 33-35 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sipos.

Claim 26 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Hafner and Vogel.

We affirm.

DISCUSSION

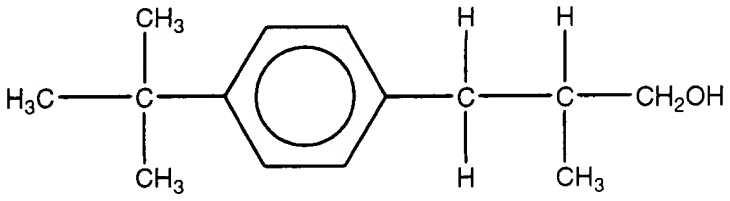
Hopp:

Claims 8, 14, 16-18, and 21-25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hopp. According to appellants (Brief, page 10), "claims 8, 14, 16-18 and 21-25 stand or fall together." Since all claims stand or fall together, we limit our discussion to representative independent claim 14. Claims will stand or fall together with claim 14. In re Young, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

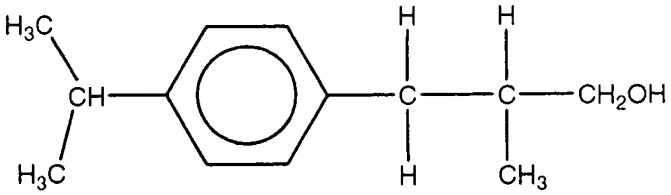
As set forth above, claim 14 is drawn to a disinfectant, antiseptic, antimycotic, deodorant or preservative composition comprising two components: (1) a compound selected from alcohols, surfactants and solvents; and (2) at least one compound according to formula 1. See Answer, bridging paragraph, pages 5-6. With regard to the second component of claim 14, the examiner finds (Answer, pages 4-5), Hopp teaches (column 1, lines 52-57), two compounds that have "germ-inhibiting, microbicidal and deodorizing effect[s]...."

In addition, with regard to the first component of claim 14, the examiner finds (Answer, page 5), Hopp teaches a composition comprising the "germ-inhibiting" compound together with a carrier (including alcohols), solvent or surfactant. Appellants do not dispute the examiner's finding that Hopp teaches a composition that includes appellants' compounds together with a carrier (including alcohols), solvent or surfactant. Accordingly, the question presented for our review is whether appellants' claimed compound, having formula 1, is prima facie obvious in view of Hopp.

In this regard, the examiner finds (Answer, page 4), Hopp teaches two species that fall within the genus encompassed by appellants' formula 1, wherein R_5 group is isopropyl or tert-butyl; the R_2 group is methyl; groups R_1, R_3, R_4, R_6 and R_7 are hydrogen; and n=1. According to the examiner (id.), the structures of these two species can be illustrated as follows:



and



We note, however, that while these two species fall within the genus encompassed by formula 1 of claim 14, the claim includes a proviso that

specifically excludes both of the species taught by Hopp. Specifically, proviso "iv)" of claim 14 reads "when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n=2." According to the examiner (Answer, pages 8-9), the "claimed active agents ... are homologous[3] of the prior art active agents."

In the alternative, the examiner asserts (Answer, page 7, footnotes omitted), "[o]ne would recognize that ... [appellants'] claims read on compositions and their use containing the active agent wherein R_1, R_3, R_4, R_5 and R_7 are hydrogen, R_2 is methyl and R_6 is isopropyl or tert-butyl, and n is 1." According to the examiner (Answer, page 8), "[t]he structural relationship of these claimed active agents compared to the H[opp] active agents is characterized as 'positional isomers'."

In the examiner's opinion, it would have been prima facie obvious to a person of ordinary skill in the art to produce positional isomers or homologues of Hopp's compounds because "[o]ne would expect the respective agents to possess a community of properties in common in view of the close structural[ ] similarity...." In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979) ("[a]n obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties."). In further support of the rejection, the examiner directs

[3] Homologous are compounds that differ by methylene ($-CH_2-$) linkages.

attention to the Manual of Patent Examining Procedure (MPEP) § 2144.09, which states in part:

> Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH2 groups) are generally of sufficiently close structural similarity that there is presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

On this record, the examiner has presented evidence that the compounds disclosed by Hopp are homologues, or in the alternative positional isomers of the compounds set forth in appellants' claim 14. Further, the evidence relied upon by the examiner demonstrates that Hopp's compounds have germ-inhibiting, microbicidal and deodorizing properties as do the compounds encompassed by generic claim 14. Accordingly, given the close structural similarity and germ-inhibiting properties of the compounds encompassed by appellants' claim 14 and those disclosed by Hopp, we find no error in the examiner's prima facie case of obviousness.

As appellants correctly point out (Brief, page 17), "[h]omology and isomerism are not substitutes for a prima facie case of obviousness and they are only a relevant fact in the determination of obviousness." However, the examiner's conclusion is not based solely on homology and isomerism; it is also based on the common properties associated with Hopp's and appellants' compounds. With reference to MPEP § 2144.09, appellants assert (Brief, page 17), the claimed invention and the prior art must be viewed as a whole,

therefore, homology should not be automatically equated with prima facie obviousness.[4] In this regard, appellants assert (Brief, page 19), "the experimental evidence of record rebuts any such prima facie case of obviousness."[5] Specifically, appellants assert (id.),

> the claimed compounds and compositions exhibit an unexpected microbicide effect against [E. coli] (Tables on pages 19, 21, 25, and 27 of the present application), as well as unexpected anti-fungal properties (Tables on pages 23 and 24 of the present application). Hopp does not teach or suggest that the claimed compounds have anti-fungal properties or microbicide properties[6] against [E. coli] and therefore cannot make obvious the compounds and compositions recited in claims 8, 14, 16-18 and 21-25.[7]

Initially, we disagree with appellants' intimation that since "Hopp does not teach or suggest that the claimed compounds have anti-fungal properties or

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[4] We recognize appellants' reference to and discussion (Brief, pages 17-19, Reply Brief, page 4) of "Supramolecular Chemistry", in support of the assertion that the prior legal precedent relating to positional isomers and homologues "are not valid", because there are "numerous examples that homologues and isomers do not have similar properties." Appellants', however, offer no citation to any legal precedent which demonstrates that the principles set forth in, for example, Payne, In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963), Wilder, May, and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) have been overruled. Further, if appellants' assertion is that when viewed as a whole, structural homologues and positional isomers may not exhibit similar properties – we agree. This is, however, consistent with the legal precedent cited above. Accordingly, we are not persuaded by appellants' assertion that the prior legal precedent is no longer valid.

[5] A prima facie case of obviousness based on structural similarity is rebuttable by proof that the claimed compounds possess unexpectedly advantageous or superior properties. In re Papesch, 315 F.2d 381, 386-87, 137 USPQ 43, 47-48 (CCPA 1963).

[6] We note appellants' assertion (Brief, page 20) "that Hopp does not disclose how to make an anti-fungal agent or microbicide against [E. coli]...." We understand appellants' assertion to be that since Hopp does not disclose that their compounds have anti-fungal or microbicide properties against E. coli properties, Hopp does not teach how to make such a compound. As we understand it, appellants' argument is a bit circular. Appellants do not dispute that Hopp teaches a method of producing the compounds disclosed therein. Accordingly, if the compounds disclosed in Hopp intrinsically possess the property of being an anti-fungal agent or microbicide against E. coli, Hopp would necessarily teach a method of producing such a compound.

[7] For clarity, we note that appellants' tables refer, by number, to the compounds illustrated on pages 14-15 of the their specification.

microbicide properties against [E. coli]," Hopp does not support the examiner's prima facie case of obviousness. In re Dillon, 919 F.2d 688, 692, 16 USPQ2d 1897, 1901 (Fed. Cir. 1991) ("the statement that a prima facie obviousness rejection is not supported if no reference shows or suggests the newly-discovered properties and results of a claimed structure is not the law."). Further, upon consideration of the Tables appellants rely upon to support their position, we find no comparison to the closest prior art. See Answer, page 13. Specifically, the two compounds taught by Hopp to have germ-inhibiting, microbicidal and deodorizing effect.

Regarding the Berscheid declaration, we note that declarant characterizes (Declaration, page 7), compounds of formula I as having a (1) lipophilic unit, the benzene group, (2) rigid spacer unit, which declarant characterizes as a $(CH_2)_n$ n=3-4, and (3) hydrophilic alcohol function. According to the Berscheid declaration (id.),

> The lipophilic unit in ... [formula I] is represented by the benzene ring itself or with substituents R_3 to R_7, wherein R_3 to R_7 are selected from lipophilic groups like alkyl, alkenyl, alkinyl, halogen, nitrile or thiocyanate.
>
> The spacer unit is represented by a C_3 (n=1) or C_4 (n=2) alkyl chain which fits the minimum distance between the lipophilic unit and the hydrophilic alcohol function....
>
> The branch is best positioned in the middle of the CH_2 chain.... The best position also for n=2 is the ß-position of the benzine ring. The branch substiuents are lipophilic alkyl chains either one substituent or in formula I disubstitution by alkyl chains. ...
>
> The hydrophilic alcohol function is essential for activity.

The Berscheid declaration explains (id.) that this "lipophilic unit – rigid spacer unit – hydrophilic alcohol function" structure, as set forth in formula I, is an "optimized structure" based on screening tests. The Berscheid declaration, however, makes no attempt to explain why the structure of the compounds set forth in Hopp does not fit this "optimized structure." In our opinion, the compounds set forth in Hopp read on this "optimized structure". Further, we find no comparison in the Berscheid declaration between appellants' compounds and the closest prior art, the compounds set forth in Hopp. See e.g., Answer, page 14.

In this regard, we note appellants' assertion (Reply Brief, page 4), "[t]he testing of Hopps' [sic] compounds is expensive and [a]ppellants know of no law that requires direct testing when the properties are already shown to be different...." As discussed above, we find no showing that the properties of appellants' compounds are different than those set forth in Hopp. At best, we find appellants' assertion that since Hopp did not test their compounds for anti-fungal properties or microbicidal properties against E. coli, Hopp's compounds necessarily have different properties than appellants. As discussed above, this is not the law, and it is not sufficient to rebut a prima facie case of obviousness.

Regarding appellants' concern concerning direct testing, we direct appellants' attention to Payne, at 316, 203 USPQ at 256, citations omitted, "[d]irect or indirect comparative testing between the claimed compounds and the closest prior art may be necessary. ... [In addition,] the test must be sufficient to permit a conclusion respecting the relative effectiveness of applicant's claimed

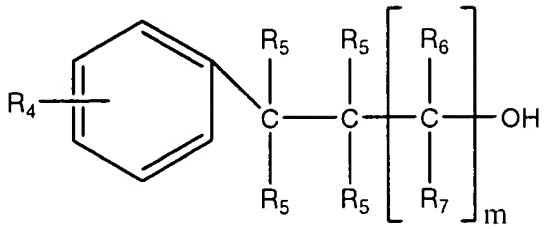
compounds and the compounds of the closest prior art." On this record, the experimental evidence presented by appellants' tests is insufficient to demonstrate that Hopp's compounds do not have anti-fungal properties or microbicidal properties against E. coli.

Accordingly, for the foregoing reasons, we find no error in the examiner's prima facie case of obviousness. Accordingly, we affirm the rejection of claim 14 under 35 U.S.C. § 103 as being unpatentable over Hopp. As discussed supra claims 8, 16-18 and 21-25 fall together with claim 14.

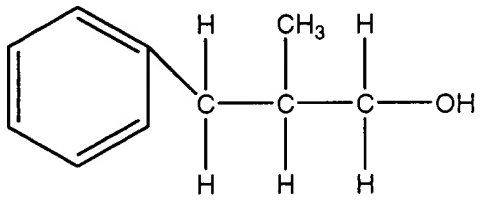
Sipos:

Claims 8, 13, 14, 16-18, 21-25 and 33-35 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sipos. According to appellants (Brief, page 11), "claims 8, 14, 16-18 and 21-25 stand or fall together. Each of claims 13 and 33-35 do not stand or fall with any other claim." However, as the examiner appreciates (Answer, page 2), appellants did not provide separate arguments for each claim grouping as required by 37 C.F.R. § 1.192(c)(7). Therefore, we treat the claims as standing or falling together. Accordingly, we limit our discussion to representative independent claim 13. Claims 8, 14, 16-18, 21-25 and 33-35 will stand or fall together with claim 13.

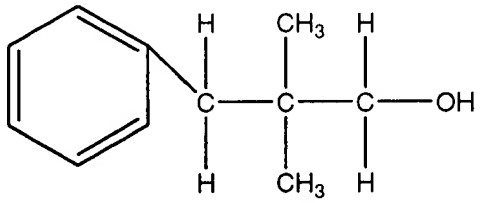
According to the examiner (Answer, page 14), Sipos "generically teaches agents" having the following structure



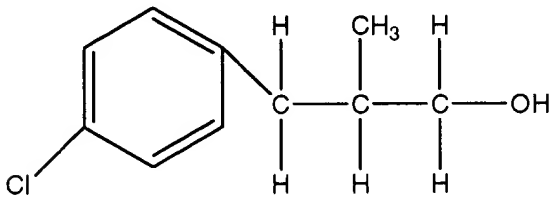
More specifically, the examiner finds (Answer, page 15), Sipos discloses (column 5, lines 43-51) the following compounds that are within the scope of appellants' claimed invention:



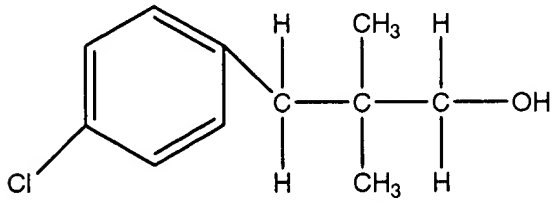
2-methyl-3-phenylpropanol



2,2-dimethyl-3-phenyl-propanol



2-methyl-3(p-chlorphenyl)-propanol

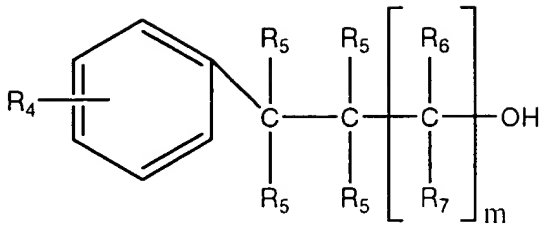


2-dimethyl-3(p-chlorophenyl)-propanol

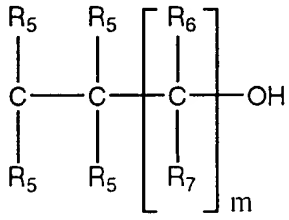
According to the examiner (Answer, page 15, footnote omitted), Sipos discloses that these compounds "are disclosed in the reference as being useful in antimicrobial compositions." More specifically, as appellants point out (Brief, bridging paragraph, pages 22-23), Sipos teaches that the compounds relied upon by the examiner are "potentiators," which are useful in "enhancing the activity of an antimicrobial agent, not that the potentiatior is an antimicrobial agent...." We note, however, that claim 13 is drawn to a compound. There is no requirement in claim 13, that this compound have any specific activity. Therefore, the question before us is not whether Sipos teaches an antimicrobial compound having the structure set forth in appellants' claim 13. Rather, the question before us on appeal is whether the compound, regardless of its activity, would have been obvious to a person of ordinary skill in the art in view of Sipos.

In this regard, the examiner finds (Answer, page 23), 2-methyl-3(p-chlorophenyl)-propanol as taught by Sipos (column 5, lines 49-50), is "an adjacent homologue and positional isomer of" of the compound set forth in appellants' claim 13. According to the examiner (Answer, page 23), "one would expect the claimed compound to possess similar properties to the prior art compound because of the close structural similarities of positional isomers and homologues as discussed above." In this regard, we note that 2-methyl-3(p-chlorophenyl)-propanol is a preferred example of Sipos' "Group III" compounds. Sipos, column 5, lines 43-50. Sipos teaches (column 4, lines 53-60), Group III

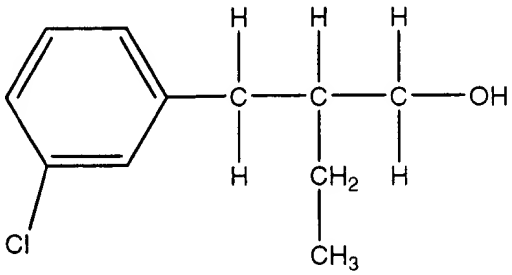
compounds have the formula



According to Sipos (column 4, line 53 to column 5, line 8),

> m is 0 or 1; R_4 is hydrogen, halogen, C_1 to C_4 alkyl, or cyclopropyl; R_5, R_6 and R_7 are independently selected from hydrogen, C_1 to C_3 alkyl and cyclopropyl, provided, however that ... the total of the carbon atoms in the structure
>
> 
>
> is from 3 to 9 carbon atoms....

Sipos teaches (column 4, lines 24-26) that compounds having the structures set forth in Group III are "potentiators[8] which can be suitably employed in the antimicrobial compositions" of the type set forth in Sipos. Therefore, following the teaching of Sipos, a compound of Group III (when m is 1; R_4 is chlorine (a halogen), R_5, R_6 and R_7 are independently H or C_2 alkyl), will have the structure:



[8] According to Sipos (column 3, lines 15-18), "the term 'potentiator' is meant to indicate ... that the compound enhances the activity of an antimicrobial agent over what it ordinarily would be if otherwise used alone."

This is the compound of appellants' claim 13. As discussed above, based on Sipos' disclosure, one of ordinary skill in the art would expect this compound to be a potentiator as described in Sipos. Accordingly, we find no error in the examiner's prima facie case of obviousness.

In response, appellants assert (Brief, page 22), "[a]s discussed fully above, the doctrines of structural similarity have recently been disproven." For the reasons set forth above, we disagree. Appellants also assert (Brief, page 23), "Sipos does not teach any compounds having the claimed properties such that one can merely select alternatives therefrom as alleged by the [e]xaminer." However, as discussed above, there is no requirement that the compound of claim 13 have any particular activity or "property."[9] Accordingly, we are not persuaded by appellants' argument to the contrary. For the foregoing reasons, we are also not persuaded by appellants' assertion that Sipos does not teach the compound of claim 13. Brief, pages 23-26. Thus, we are not persuaded by appellants' arguments (Brief, pages 24-26, and Reply Brief, pages 6-8) that the Berscheid Declaration and other evidence provided by appellants' demonstrates that it would have been unexpected that a compound having the structure as set forth in appellants' claim 13 would have "anti-fungal properties and microbial effect on [E. coli]...."

[9] We recognize appellants' argument (Reply Brief, page 5), disputing the examiner's characterization of Sipo's potentiators as "active agents." In our opinion, appellants' semantic argument lacks merit. While there is no doubt that the examiner could have characterized the Group III compounds as potentiators rather than "active agents", we note that according to Sipos a potentiator "enhances the activity of an antimicrobial agent." Accordingly, it would seem to us that both the potentiator and the antimicrobial agent in Sipo's compositions are "active agents."

As set forth in In re Zierden 411 F.2d 1325, 1329, 162 USPQ 102, 104 (CCPA 1969):

> A mere statement of a new use for an otherwise old or obvious composition cannot render a claim to the composition patentable. As we said in In re Lemin, 51 CCPA 942, 326 F.2d 437, 140 USPQ 273, 276 (1964),
>
> > Appellants are clearly correct in demanding that the subject matter as a whole must be considered under 35 U.S.C. 103. But in applying the statutory test, the differences over the prior art must be more substantial than a statement of the intended use of an old composition. ... It seems to us that the composition ... would be exactly the same whether the user were told to cure pneumonia in animals with it ... or to promote plant growth with it (as here). The directions on the label will not change the composition....

Accordingly, we are not persuaded by appellants' assertion that since Sipos did not disclose that their Group III compounds are useful as antimicrobials, or as having anti-fungal properties and microbial effect on E. coli., they cannot have those properties. See also, In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990), "[t]he discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, cannot impart patentability to claims to the known composition".

On reflection, we find no error in the examiner's prima facie case of obviousness, and we are not persuaded by appellants' rebuttal arguments and evidence. Accordingly, we affirm the rejection of claim 13 under 35 U.S.C. § 103 as being unpatentable over Sipos. As set forth above, claims 8, 14, 16-18, 21-25 and 33-35 will stand or fall together with claim 13.

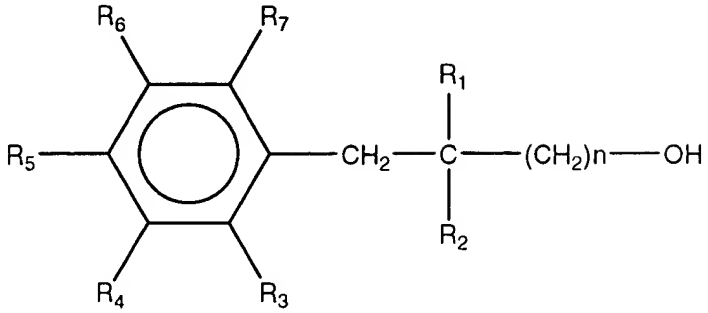
Hafner and Vogel:

Claim 26 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Hafner and Vogel. According to the examiner (Answer, page 28), Hafner teaches "steps (b)-(d)," of appellants' claimed method, "note the schematic at the top of column 3, the discussion thereof and Example 3. The examiner relies on Vogel to make up for the deficiency in Hafner. According to the examiner (Answer, page 29), Vogel demonstrates that step a of appellants' claim "is a standard method of synthesis of a C-substituted malonic ester (see the bottom portion of page 483 and [page 484] Example II,153). In this regard, the examiner notes (id.), Vogel "suggest that the C-substituted malonic ester can be further reacted to form a C-disubstituted malonic ester (see the first full paragraph of page 484) which corresponds to claim step (b) and the first step of the H[afner] process."

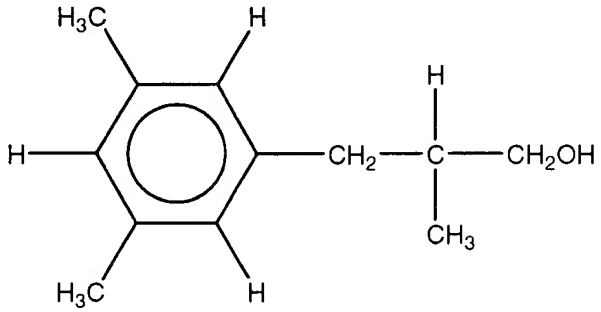
In response, appellants understand the examiner's statement of the rejection "to mean that Hafner uses different starting materials." Reply Brief, page 8. Accordingly, appellants "submit that claim 26 recites a novel process using novel starting materials." Id. We disagree.

As the examiner explains, Hafner teaches steps (b)-(d) of appellants' claimed method. Answer, page 28. We find no argument from appellants that identifies a specific limitation in steps (b)-(d) of the claimed invention that is missing from Hafner. Claim 26 is drawn to a process for producing a genus of

compounds of the following formula:



As the examiner explains (Answer, page 34), claim 26 provides "for R_1 to be hydrogen, R_2 to be methyl (C_1 alkyl), R_3 to be hydrogen, R_4 to be methyl, R_5 to be hydrogen, R_6 to be hydrogen or methyl (C_1 alkyl), and R_7 to be hydrogen." Accordingly, when R_6 is methyl, and n=1, the compound would be 2-methyl-3-(3,5-dimethylphenyl)-propan-1-ol, and would have the formula:



In this regard, we direct appellants' attention to Example 2, column 4, line 64 – column 5, line 28 which describes 2-methyl-3-(3,5-dimethylphenyl)-propan-1-ol. In addition, we direct appellants' attention to column 3, lines 1-27, wherein the reaction pathway for the production of the compound is described schematically, when "X" is methyl. Accordingly, the compound produced by Hafner's method is a species of the genus of compounds produced by the method of appellants' claim 26.

As the examiner explains (Answer, page 28), however, Hafner's method begins by "dialkylating a monoalkylated malonic acid ester (diethyl methylmalonate) with a benzyl halide (3-methylbenzyl chloride or 3,5-dimethylbenzyl chloride)." According to Hafner (column 3, lines 48-49), "[d]iethyl methylmalonate and methyl 2-bromopropionate are known compounds." Nevertheless, appellants' claimed method begins (step a) by "monoalkylating a malonic acid dialkyl ester to introduce the group R_2." Stated differently, and with regard to Hafner's method, appellants' claimed method begins with a reaction step to produce the known diethyl methylmalonate reactant set forth in the first reaction schematically illustrated in column 3, lines 1-6 of Hafner. Accordingly, the question becomes -- is monoalkylating a malonic acid dialkyl ester to introduce a methyl (appellants' R_2 group) an obvious reaction step to obtain the diethyl methylmalonate reactant used by Hafner? As the examiner explains (Answer, page 30), "inherent in any process is the necessity of obtaining the starting materials. This almost always necessitates the starting material to have been prepared by some synthetic method." We agree.

The malonic acid dialkyl ester of appellants' "step a" is open to include diethyl malonate. As the examiner explains (Answer, page 29), Vogel teaches diethyl malonate. See e.g., Vogel, page 483, first line. In addition, as the examiner explains (Answer, page 29), Vogel teaches monoalkylating diethyl malonate to obtain a "C-substituted malonic ester". Vogel illustrates this synthesis step to produce diethyl n-butylmalonate ($C_4H_9{}^nCH(COOC_2H_5)_2$). See

Vogel, page 483, second reaction scheme from the bottom.[10] While Vogel exemplifies the reaction chemistry to produce diethyl n-butylmalonate, appellants' provide no evidence on this record that this same "textbook" chemistry could not be used to produce the diethyl methylmalonate reactant set forth in the first step of Haftner's schematically illustrated method. As set forth in Environmental Designs, Ltd. et. al. v. Union Oil Company of California et al., 218 USPQ 865, 868-69 (Fed. Cir. 1983), for obviousness under 35 U.S.C. § 103,

> [t]he important consideration lies in the need to adhere to the statute, i.e., to hold that an invention would or would not have been obvious, as a whole, when it was made, to a person of "ordinary skill in the art" -- not to the judge, or to a layman, or to those skilled in remote arts, or to geniuses in the art at hand.

In our opinion, absent evidence to the contrary, a person of ordinary skill in the art would have been motivated to use the "textbook" chemistry set forth in Vogel to arrive at the diethyl malonate reactant used by Hafner. Accordingly, it is our opinion that the examiner provided the facts necessary to establish a prima facie case of obviousness.

We are not persuaded by appellants' assertion (Brief, page 26), "[t]he theoretical combination of Hafner and Vogel provides a method which makes a different alcohol than those claimed because Hafner teaches the use of different reactants than those in the claimed method." As discussed above, Hafner teaches reactants within the scope of appellants' generic claim. In addition, we

[10] For clarity, we note that Vogel identifies the structure of diethyl malonate as ethyl malonate. In this regard, we recognize that Vogel labels the structure of diethyl n-butylmalonate as ethyl n-butylmalonate. Vogel, however, defines the chemical structure of this compound as $C_4H_9{}^{\circ}CH(COOC_2H_5)_2$. This is diethyl n-butylmalonate.

disagree with appellants' assertion (Reply Brief, page 9) that the claim "recites a novel process using novel starting materials." As discussed above, Hafner teaches reactants within the scope of appellants' generic claim, and appellants' fail to identify a particular reaction step in Hafner that does not comprise appellants' method steps.

A conclusion of prima facie obviousness does not end a patentability determination under 35 U.S.C. § 103. As stated in In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986):

> If a prima facie case is made in the first instance, and if the applicant comes forward with reasonable rebuttal, whether buttressed by experiment, prior art references, or argument, the entire merits of the matter are to be reweighed. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

Here, appellants provide evidence of unexpected results. Specifically, appellants argue (Brief, page 28),

> the claimed invention provides unexpected properties not disclosed in the cited references. As discussed above, the compounds formed by the claimed method exhibit antimicrobial, disinfectant, deodorant, antimycotic or preservative properties. Hafner only discloses that the alcohols disclosed therein provide fragrance properties. Vogel also does not teach or suggest a method of forming compounds that are suitable for use as antimicrobial, disinfectant, deodorant, antimycotic or preservative agents.

As discussed above, and stated by the examiner (Answer, page 34), "the claims read on products identical to those obtained by H[afner]." As set forth in Zierden "[a] mere statement of a new use for an otherwise old or obvious composition cannot render a claim to the composition patentable." Accordingly, we are not persuaded by appellants' assertion that since Hafner did not disclose

their compounds to be useful as antimicrobials, disinfectants, deodorants, antimycotics or presertives, they cannot have those properties. That Hafner did not report the same properties of the compounds produced by Hafner's method as appellants' now report does not mean that the compound(s) and process for making these compounds that are within the scope of appellant claimed invention do not have the properties asserted by appellants. See Spada. Likewise, these properties of the compounds cannot impart patentability to an obvious method of making the compounds. Accordingly, we are not persuaded by appellants' assertions to the contrary.

For the foregoing reasons we affirm the rejection of claim 26 under 35 U.S.C. § 103 as being unpatentable over the combination of Hafner and Vogel.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Toni R. Scheiner)
Administrative Patent Judge)
)
) BOARD OF PATENT
)
Donald E. Adams) APPEALS AND
Administrative Patent Judge)
) INTERFERENCES
)
Demetra J. Mills)
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